

CLAIMS

What is claimed is:

1. A method of determining a communications path in a computer network, the method comprising:

sending a simulated network message within a model of said computer network from a source device component within said model to a destination device component within said model along a device component path, wherein said message does not traverse said computer network; and

recording the device components traversed by said message, thereby determining said communications path.

2. A method according to claim 1 and further comprising providing said model comprising a plurality of agents, each agent corresponding to a different network element in said computer network comprising a plurality of network elements, and a plurality of device components (DC), each of said device components modeling at least one aspect of one of said network elements, said aspect being either of a physical and a functional characteristic of said network element, wherein each of said agents comprises a plurality of said device components, and wherein at least two of said device components within at least one of said agents are logically interconnected, each logical interconnection corresponding to either of a physical and a functional interconnection found within or between any of said network elements.

3. A method according to claim 1 wherein said sending step comprises each device component along said device component path traversed by said message:

identifying an intermediate device component along said device component path to which said message is to be passed; and

passing said message and an identifier of said intermediate device component to an immediately next device component.

4. A method according to claim 3 wherein said identifying step comprises

identifying in accordance with network routing rules.

5. A method according to claim 4 wherein said identifying step comprises identifying said intermediate device component within the same network layer.

6. A method according to claim 3 and further comprising:
receiving said message at said immediately next device component;
if said message is received from a device component at a higher network layer:
placing information onto an information stack as may be needed by any device component along said device component path to identify other device components along said device component path to which said message is to be passed; and
if said message is received from a device component at a lower network layer:
removing information from said information stack needed to identify a subsequent intermediate device component along said device component path to which said message is to be passed.

7. A method according to claim 6 wherein said identifying step comprises identifying using said removed stack information.

8. A method according to claim 1 and further comprising checking at any of said device components along said device component path traversed by said message the validity of said path.